SAFETY DATA SHEET
HTH Granules

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

PRODUCT NAME
HTH Granules

SUPPLIER
Univar
Aquarius House
6 Midpoint Business Park
Thornbury
Bradford
BD3 7AY
+44 1274 267300
+44 1274 267306
sds@univareurope.com

SYNONYMS, TRADE NAMES
Calcium Hypochlorite, Supershock Granules, Fi Clor S/\textit{Fast}, Briswim S/Shock, Easifo, hth® SHOCK,

APPLICATION
Water Treatment,

Emergency Contact Number
Office Hours +44 1274 267346

Emergency Contact Number
Outside Office Hours +441865 407333

SDS No.
10602

2 HAZARDS IDENTIFICATION

Contact with combustible material may cause fire. Harmful if swallowed. Causes burns. Very toxic to aquatic organisms. Contact with acids liberates toxic gas.

CLASSIFICATION (1999/45)
Xn;R22. C;R34. O;R8. N;R50. R31.

3 COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>EC No.</th>
<th>CAS-No.</th>
<th>Content</th>
<th>Classification (67/548)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CALCIUM CHLORIDE</td>
<td>233-140-8</td>
<td>10043-52-4</td>
<td>1-5%</td>
<td>Xi;R36</td>
</tr>
<tr>
<td>Calcium Hydroxide</td>
<td>215-137-3</td>
<td>1305-62-0</td>
<td>5-10%</td>
<td>Xi;R38, R41.</td>
</tr>
<tr>
<td>CALCIUM HYPOCHLORITE</td>
<td>231-908-7</td>
<td>7778-54-3</td>
<td>50-100%</td>
<td>O;R8 C;R34 Xn;R22 R31 N;R50</td>
</tr>
</tbody>
</table>

The Full Text for all R-Phrases are Displayed in Section 16

4 FIRST-AID MEASURES

INHALATION
Move into fresh air and keep at rest. Get medical attention.

INGESTION
Provide rest, warmth and fresh air. Immediately rinse mouth and drink plenty of water (200-300 ml). Get medical attention.

SKIN CONTACT
Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention immediately.
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EYE CONTACT
Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyes wide apart. Get medical attention immediately. Continue to rinse.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA
Water. Carbon dioxide (CO2).

SPECIFIC HAZARDS
Chlorine.

PROTECTIVE MEASURES IN FIRE
Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS
Follow precautions for safe handling described in this safety data sheet. Avoid contact with skin and eyes. Provide adequate ventilation.

ENVIRONMENTAL PRECAUTIONS
Spillages or uncontrollable discharges into watercourses must be IMMEDIATELY alerted to the Environmental Agency or other appropriate regulatory body.

SPILL CLEAN UP METHODS
Remove spillage with vacuum cleaner. If not possible, collect spillage with shovel, broom or the like. Flush contaminated area with plenty of water. Collect spillage in containers, seal securely and deliver for disposal according to local regulations.

7 HANDLING AND STORAGE

USAGE PRECAUTIONS
Read and follow manufacturer’s recommendations. Avoid spilling, skin and eye contact. Provide good ventilation.

STORAGE PRECAUTIONS
Keep containers tightly closed. Keep in original container. Suitable containers: polyethylene. Plastic lined steel drum. Store in closed original container at temperatures between 0°C and 30°C.

STORAGE CLASS
Oxidiser storage.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

PROTECTIVE EQUIPMENT

ENGINEERING MEASURES
Provide adequate ventilation. Observe occupational exposure limits and minimize the risk of inhalation of dust.

RESPIRATORY EQUIPMENT
If ventilation is insufficient, suitable respiratory protection must be provided.

HAND PROTECTION
PVC gloves are recommended. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

EYE PROTECTION
Goggles/face shield are recommended.

OTHER PROTECTION
Wear rubber apron. Wear rubber footwear.
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HYGIENE MEASURES
Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily if there is any possibility of contamination. When using do not eat, drink or smoke.

9 PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPEARANCE</td>
<td>Granular</td>
</tr>
<tr>
<td>COLOUR</td>
<td>White</td>
</tr>
<tr>
<td>ODOR</td>
<td>Characteristic</td>
</tr>
<tr>
<td>SOLUBILITY</td>
<td>Slightly soluble in water.</td>
</tr>
<tr>
<td>RELATIVE DENSITY</td>
<td>0.8 - 1.3 20</td>
</tr>
<tr>
<td>pH-VALUE, DILUTED</td>
<td>10.5 - 11.5 1</td>
</tr>
<tr>
<td>SOLUTION</td>
<td></td>
</tr>
<tr>
<td>SOLUBILITY VALUE</td>
<td>18</td>
</tr>
<tr>
<td>H2O@20°C</td>
<td></td>
</tr>
<tr>
<td>DECOMPOSITION TEMPERATURE (°C)</td>
<td>170 - 180</td>
</tr>
</tbody>
</table>

10 STABILITY AND REACTIVITY

STABILITY
Stable under normal temperature conditions and recommended use.

CONDITIONS TO AVOID
Avoid heat, flames and other sources of ignition. Avoid excessive heat for prolonged periods of time.

MATERIALS TO AVOID

HAZARDOUS DECOMPOSITION PRODUCTS
Chlorine.

11 TOXICOLOGICAL INFORMATION

TOXIC DOSE 1 - LD 50 850 mg/kg (oral rat)

INHALATION
Vapours may irritate throat and respiratory system and cause coughing.

INGESTION
Harmful if swallowed.

SKIN CONTACT
Irritating to skin. Causes burns.

EYE CONTACT
May cause severe irritation to eyes. May cause chemical eye burns. Causes burns.

HEALTH WARNINGS
Severe pulmonary irritant.

MEDICAL SYMPTOMS
Pulmonary oedema, frothy sputum.

12 ECOLOGICAL INFORMATION

ECOTOXICITY
The product contains a substance which is very toxic to aquatic organisms.

LC 50, 96 Hrs, FISH mg/l 0.088

MOBILITY
The product is partly soluble in water. May spread in the aquatic environment.

ACUTE FISH TOXICITY
Very toxic to aquatic organisms.

WATER HAZARD CLASSIFICATION
WGK 2

13 DISPOSAL CONSIDERATIONS
HTH Granules

GENERAL INFORMATION
Waste is classified as hazardous waste. Disposal to licensed waste disposal site in accordance with the local Waste Disposal Authority. Do not puncture or incinerate even when empty.

DISPOSAL METHODS
Dispose of waste and residues in accordance with local authority requirements.

14 TRANSPORT INFORMATION

UK ROAD CLASS 5.1
PROPER SHIPPING NAME CALCIUM HYPOCHLORITE, HYDRATED or CALCIUM HYPOCHLORITE, HYDRATED MIXTURE
UN NO. ROAD 2880
ADR CLASS NO. 5.1
ADR PACK GROUP II
HAZARD No. (ADR) 50
HAZCHEM CODE 1W
RID CLASS NO. 5.1
UN NO. SEA 2880
IMDG PACK GR. II
UN NO. AIR 2880
AIR PACK GR. II

15 REGULATORY INFORMATION

LABELLING
Corrosive
Harmful
Oxidising
Dangerous for the environment

CONTAINS CALCIUM HYPOCHLORITE

RISK PHRASES
R8 Contact with combustible material may cause fire.
R22 Harmful if swallowed.
R31 Contact with acids liberates toxic gas.
R34 Causes burns.
R50 Very toxic to aquatic organisms.

SAFETY PHRASES
S1/2 Keep locked up and out of the reach of children.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S29 Do not empty into drains.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show label where possible).
EU DIRECTIVES
Dangerous Preparations Directive 1999/45/EC.

STATUTORY INSTRUMENTS
Chemicals (Hazard Information and Packaging) Regulations.

APPROVED CODE OF PRACTICE
Safety Data Sheets for Substances and Preparations. Classification and Labelling of Substances and Preparations Dangerous for Supply.

GUIDANCE NOTES
CHIP for everyone HSG(108).

16 OTHER INFORMATION

REVISION DATE: 06.08.2010

HTH Granules
Avoid release to the environment. Refer to special instructions/safety data sheets.

UNIVAR LTD

REV. NO./REPL. SDS 01
GENERATED SDS NO. 10602

SAFETY DATA SHEET STATUS
Approved.

DATE 06.08.2010

SIGNATURE Jitendra Panchal

RISK PHRASES IN FULL

R34 Causes burns.
R31 Contact with acids liberates toxic gas.
R8 Contact with combustible material may cause fire.
R22 Harmful if swallowed.
R36 Irritating to eyes.
R38 Irritating to skin.
R41 Risk of serious damage to eyes.
R50 Very toxic to aquatic organisms.